

WHAT IS CLAIMED IS:

1. An anti-vibratory handle for installation on a tool producing vibrations,
5 comprising:
a stationary portion mounted on a body of the tool;
a mobile portion comprising a hand-grip member; and
an articulation between the stationary and mobile portions, the
articulation comprising:
10 - a pivot assembly interconnecting the stationary and mobile
portions; and
- a resilient vibration-damping assembly interposed between the
stationary and mobile portions to restrict angular movement of
the mobile portion on the pivot assembly about the stationary
15 portion substantially within a given angular range.
2. An anti-vibratory handle as defined in claim 1, wherein:
the vibrations are produced by a reciprocating movement of the tool along
a first axis; and
20 the pivot assembly defines a pivot axis substantially perpendicular to the
first axis.
3. An anti-vibratory handle as defined in claim 2, wherein:
the hand grip member of the mobile portion is spaced apart from the pivot
25 axis in a direction generally transverse to the first axis.
4. An anti-vibratory handle as defined in claim 1, wherein:
the vibrations produce a reciprocating movement of the body of the tool in
a first direction;
30 the pivot assembly defines a pivot axis substantially perpendicular to the
first direction; and

the hand grip member of the mobile portion is spaced apart from the pivot axis in a second direction generally perpendicular to the first direction.

5 5. An anti-vibratory handle as defined in claim 1, wherein:
the resilient vibration-damping assembly comprises a plurality of resilient members interposed between the stationary and mobile portions.

10 6. An anti-vibratory handle as defined in claim 1, wherein:
the resilient vibration-damping assembly comprises a resilient torsion member interposed between the stationary and mobile portions.

15 7. An anti-vibratory handle as defined in claim 2, wherein:
the stationary portion comprises a first arm member parallel to the first axis; and
the mobile portion comprises a second arm member angularly spaced apart from the first arm member.

20 8. An anti-vibratory handle as defined in claim 7, wherein, when the tool is not operating, the second arm member is spaced apart from the first arm member by an angle situated within the range of 75° to 130°.

25 9. An anti-vibratory handle as defined in claim 7, wherein:
the first arm member comprises a proximal end fixedly connected to the body of the tool, and a distal end forming part of the articulation; and
the second arm member comprises a proximal end forming part of the articulation and a distal end for receiving the hand-grip member.

30 10. An anti-vibratory handle as defined in claim 9, wherein the pivot assembly comprises:
first and second opposite side ears on the distal end of the first arm member, the first and second opposite side ears having respective coaxial threaded holes;

a hollow rectangular box-like structure on the proximal end of the second arm member, the hollow rectangular box-like structure having:

- an open wall to receive the first and second opposite side ears on the distal end of the first arm member; and
- 5 - first and second opposite side walls with respective coaxial holes;

a first bushing placed in the hole of the first side wall and a second bushing placed in the hole of the second side wall; and

- 10 a first screw driven in the threaded hole of the first ear through the first bushing, and a second screw driven in the threaded hole of the second ear through the second bushing.

11. An anti-vibratory handle as defined in claim 9, wherein:

- 15 the distal end of the first arm member comprises first and second opposite longitudinal flat faces generally parallel to the pivot axis;

the proximal end of the second arm member comprises a hollow rectangular box-like structure having:

- an open wall to receive the distal end of the first arm member; and
- 20 - first and second opposite walls generally parallel to the pivot axis and having respective inner faces;

the resilient vibration-damping assembly comprises:

- a first resilient member between the first longitudinal flat face and the inner face of the first wall of the hollow rectangular box-like structure; and
- 25 - a second resilient member between the second longitudinal flat face and the inner face of the second wall of the hollow rectangular box-like structure.

- 30 12. An anti-vibratory handle as defined in claim 11, wherein:

the distal end of the first arm member further comprises a third end flat face generally perpendicular to the first and second opposite longitudinal flat faces;

5 the hollow rectangular box-like structure further comprises a bottom wall generally perpendicular to the inner faces of the first and second opposite walls;

the first resilient member comprises a first shoulder placed between the third end flat face and the bottom wall; and

the second resilient member comprises a second shoulder placed between the third end flat face and the bottom wall.

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13. An anti-vibratory handle as defined in claim 12, wherein:

the first resilient member comprises a pair of spaced apart parallel legs extending from the first shoulder between the first longitudinal flat face and the inner face of the first wall of the hollow rectangular box-like structure; and

15 the second resilient member comprises a pair of spaced apart parallel legs extending from the second shoulder between the second longitudinal flat face and the inner face of the second wall of the hollow rectangular box-like structure.

20 14. An anti-vibratory handle as defined in claim 13, wherein:

the pair of spaced apart parallel legs of the first resilient member each comprise a thicker free end section; and

the pair of spaced apart parallel legs of the second resilient member each comprise a thicker free end section.

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15. An anti-vibratory handle as defined in claim 12, wherein:

the third end flat face comprises a plurality of holes;

the bottom wall of the hollow rectangular box-like structure comprises a plurality of holes; and

30 the anti-vibratory handle comprise a plurality of flexible air-transmission tubes having first ends respectively inserted in the holes in the third end flat face

and second ends respectively inserted in the holes in the bottom wall of the hollow rectangular box-like structure;

wherein the tubes extend between the first and second shoulders of the first and second resilient members.

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16. An anti-vibratory handle as defined in claim 5, wherein:
the resilient members are made of elastomeric material.

17. A method of installing an anti-vibratory handle on a tool producing
10 vibrations, comprising:

mounting a stationary handle portion on a body of the tool;

connecting a mobile tool portion to the stationary tool portion through a pivot assembly, the mobile tool portion comprising a hand-grip member; and

15 interposing a resilient vibration-damping assembly between the stationary
and mobile tool portions to restrict angular movement of the mobile tool portion on the pivot assembly about the stationary tool portion substantially within a given angular range.

18. A method of installing an anti-vibratory handle as defined in claim 17,
20 wherein:

the vibrations are produced by a reciprocating movement of the tool along a first axis;

the method comprises orienting a pivot axis of the pivot assembly perpendicular to the first axis.

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19. A method of installing an anti-vibratory handle as defined in claim 18,
comprising:

spacing apart the hand grip member of the mobile portion from the pivot axis in a direction generally transverse to the first axis.

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20. A method of installing an anti-vibratory handle as defined in claim 17,
wherein:

the vibrations produce a reciprocating movement of the body of the tool in a first direction;

orienting a pivot axis of the pivot assembly substantially perpendicular to the first direction; and

- 5 spacing apart the hand grip member of the mobile portion from the pivot axis in a second direction generally perpendicular to the first direction.

21. A method of installing an anti-vibratory handle as defined in claim 17, wherein:

- 10 interposing a resilient vibration-damping assembly comprises interposing a plurality of resilient members between the stationary and mobile tool portions.